REMARKS

The foregoing amendments are made to change multiple dependencies. No new matter is introduced thereby and allowance of all claims 1-34 is hereby solicited.

Attached hereto as pages 6 through 9 is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version With Markings to Show Changes Made."**

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 1, 4-5, 8-10, 12-14, 17-18, 21, 23, 25-31 have been amended as follows:

1. [AMENDED] A method for searching for compounds or mutations interacting directly or indirectly with the insulin signaling pathway, characterized in that a viable *chico* mutant insect is treated with at least one compound or with at least one mutation generating means, and that the effect of such treatment on the body size, [and/or] cell size, [and/or] development time [and/] or lipid level is determined whereby alterations of the body size, [and/or] cell size, [and/or] development time [and/] or lipid level are detectable in at least part of the animal.

4. [AMENDED] The method of claim 2 [or 3] wherein the mutant does not comprise a wild-type *chico* gene.

5. [AMENDED] The method of claim 2 [or 3] wherein the Drosophila mutant comprises one wild-type *chico* gene.

8. [AMENDED] The method of claim 2 [anyone of claims 2 to 7] wherein the Drosophila mutant comprises at least one *chico* mutation with lacking or reduced activity compared to wild-type *chico*.

10. [AMENDED] The method of claim 2 [anyone of claims 2 to 9] wherein the Drosophila lacks at least one *chico* gene.

12. [AMENDED] The method of claim 2 [anyone of claims 1 to 11] wherein the compound is a compound for the treatment of diabetes type 2.

13. [AMENDED] The method of claim 2 [anyone of claims 1 to 12,] wherein the alteration of the body size and/or the cell size and/or the development time and/or the lipid level is detectable in the whole animal.

14. [AMENDED] The method of claim 2 [anyone of claims 1 to 12,] wherein the alteration of the body size and/or the cell size and/or the development time and/or the lipid level is detectable in the head region only.

17. [AMENDED] The mutant of claim 15 [or 16] that does not comprise a wild-type *chico* gene.

18. [AMENDED] The mutant of claim 15 [or 16] that comprises one wild-type *chico* gene.

21. [AMENDED] The mutant of claim 15 [anyone of claims 15 to 20]comprising at least one *chico* mutation with lacking or reduced activity compared to wild-type *chico*.

23. [AMENDED] The mutant of claim 15 [anyone of claims 15 to 22] lacking at least one *chico* gene.

25. [AMENDED] The mutant of claim 15 [anyone of claims 15 to 24] which is a fly mutant[, in particular a Drosophila mutant].

26. [AMENDED] The mutant of claim 15 [anyone of claims 15 to 25,] wherein at most one wild-type *chico* gene is found in the whole body of the insect.

27. [AMENDED] The mutant of claim 15 [anyone of claims 15 to 25,] wherein at most one wild-type *chico* gene is found in the head region of the insect only.

28. [AMENDED] Use of an insect according to claim 15 [anyone of claims 15 to 27,] as a means in screening compounds for modulating diseases.

29. [AMENDED] Use of an insect according to claim 15 [anyone of claims 15 to 27] as a means for searching for mutations involved directly or indirectly in the insulin signaling pathway.

30. [AMENDED] Use according to claim 22 [or 23,] characterized in that the disease is diabetes type 2.

31. [AMENDED] A method for generating a mutant insect, characterized in that adult animals[, in particular males,] are treated with a mutation generating means under mutation generating conditions, that thus treated insects are crossed to wild-type or mutant insects[, in particular *chico* mutant insects,] and that viable offsprings with altered cell number, [and/or] cell size, [and/or] developmental time [and/]or lipid levels are cultivated under suitable conditions.

Claims 32-34 have been added as follows:

--32. The method of claim 31 wherein the adult animals are males.

33. The method of claim 31 wherein the treated insects are crossed with *chico* mutant insects.

34. The Mutant of claim 25 which is a Drosophila mutant.--

CLEAN VERSION OF CLAIMS AFTER AMENDMENT

1. A method for searching for compounds or mutations interacting directly or indirectly with the insulin signaling pathway, characterized in that a viable *chico* mutant insect is treated with at least one compound or with at least one mutation generating means, and that the effect of such treatment on the body size, cell size, development time or lipid level is determined whereby alterations of the body size, cell size, development time or lipid level are detectable in at least part of the animal.

2. The method of claim 1 characterized in that the viable *chico* mutant insect comprises at most one wild-type *chico* gene.

3. The method of claim 2 wherein the mutant is a Drosophila mutant and wherein said mutant is treated in the egg or larvae stadium with said compound or compound generating means.

4. The method of claim 2 wherein the mutant does not comprise a wild-type *chico* gene.

5. The method of claim 2 wherein the Drosophila mutant comprises one wild-type *chico* gene.

6. The method of claim 5 wherein the wild-type *chico* gene encodes the amino acid sequence of Table 1 (SEQ. ID. NO. 2, 3).

7. The method of claim 6, wherein the wild-type *chico* gene is the genomic or the cDNA sequence represented in Table 1 (SEQ. ID. NO. 1, 2) or Table 2 (SEQ. ID. NO. 4).

8. The method of claim 2 wherein the Drosophila mutant comprises at least one *chico* mutation with lacking or reduced activity compared to wild-type *chico*.

9. The method of claim 7 wherein the *chico* mutation is the mutation described in Figure 3A.

10. The method of claim 2 wherein the Drosophila lacks at least one *chico* gene.

11. The method of claim 10 wherein the mutant lacks both *chico* genes.

12. The method of claim 2 wherein the compound is a compound for the treatment of diabetes type 2.

13. The method of claim 2 wherein the alteration of the body size and/or the cell size and/or the development time and/or the lipid level is detectable in the whole animal.

14. The method of claim 2 wherein the alteration of the body size and/or the cell size and/or the development time and/or the lipid level is detectable in the head region only.

15. A viable insect mutant comprising at most one wild-type *chico* gene in at least a part of its body and said at least one part of the body shows reduced size.

16. The mutant of claim 15 that does not comprise as sole *chico* genes two *chico* genes.

17. The mutant of claim 15 that does not comprise a wild-type *chico* gene.

18. The mutant of claim 15 that comprises one wild-type *chico* gene

19. The mutant of claim 18 wherein the wild-type *chico* gene encodes the amino acid sequence of Table 1 (SEQ. ID. NO. 2, 3).

20. The mutant of claim 19, wherein the wild-type *chico* gene is the genomic or the cDNA sequence represented in Table 2 (SEQ. ID NO. 4) or Table 1 (SEQ. ID. NO. 1, 2).

21. The mutant of claim 15 comprising at least one *chico* mutation with lacking or reduced activity compared to wild-type *chico*.

22. The mutant of claim 21 wherein the *chico* mutation is the mutation described in Figure 3A.

23. The mutant of claim 15 lacking at least one *chico* gene.

24. The mutant of claim 15 lacking both *chico* genes.

25. The mutant of claim 15 which is a fly mutant.

26. The mutant of claim 15 wherein at most one wild-type *chico* gene is found in the whole body of the insect.

27 The mutant of claim 15 wherein at most one wild-type *chico* gene is found in the head region of the insect only.

28. Use of an insect according to claim 15 as a means in screening compounds for modulating diseases.

29. Use of an insect according to claim 15 as a means for searching for mutations involved directly or indirectly in the insulin signaling pathway.

30. Use according to claim 22 characterized in that the disease is diabetes type 2.

31. A method for generating a mutant insect, characterized in that adult animals are treated with a mutation generating means under mutation generating conditions, that thus treated insects are crossed to wild-type or mutant insects[, in particular *chico* mutant insects,] and that viable offsprings with altered cell number, cell size, developmental time [and/]or lipid levels are cultivated under suitable conditions.

32. The method of claim 31 wherein the adult animals are males.

33. The method of claim 31 wherein the treated insects are crossed with *chico* mutant insects.

34. The Mutant of claim 25 which is a Drosophila mutant.